IN THE CLAIMS

What is claimed is:

1. (Currently amended) A test system for testing network environments and devices comprising:

a network processor;

storage associated with said network processor;

an interface coupling an output of said network processor to a communications network;

and

instructions and data within said storage, said instructions and data directing said network processor to provide at least one function, wherein said at least one function is selected from the group consisting of a network emulator, a network profile generator, a network profile capture tool, a packet generation tool, an application traffic generation tool, a real-time packet analysis tool, and a network packet capture and analysis tool.

2. (Canceled)

3. (Original) The test system of claim 1 wherein said test system is utilized with a variety of different protocols.

4. (Original) The test system of claim 3 wherein said protocols are selected from the group consisting of TCP, TCP/IP, MPLS, SCTP, UDP, and RTP.

5. (Original) The test system of claim 1 wherein said test system is utilized with a variety of different interfaces.

6. (Original) The test system of claim 5 wherein said interfaces are selected from the group consisting of 10Mbit Ethernet, 100Mbit Ethernet, 1 gigabit Ethernet, 1.0625 Gigabit Fibrechannel, OC-3c, OC-12, OC-12c, T1/E1, and T3/E3.

7. (Original) The test system of claim 1 further comprising at least one additional network processor.

8. (Original) The test system of claim 7 where at least one additional network processor is in communication with said network processor.

9. (Original) The test system of claim 1 further comprising a Central Processing Unit (CPU), said CPU in communication with said network processor.

10. (Original) The test system of claim 7 wherein said network processor is utilized as an accelerator to analyze data at line rates.

11. (Original) The test system of claim 9 wherein said network processor provides data to said CPU for analysis.

12. (Original) The test system of claim 9 wherein said CPU has a feedback loop to said network processor.

13. (Original) The test system of claim 1 wherein said test system changes from providing a first function to providing a second function by changing the instructions and data in said storage.

14. (Original) The test system of claim 1 wherein said test system provides additional functions simultaneously to the network processor by loading multiple sets of instructions in said storage.

15. (Currently amended) A computer program product comprising a computer usable medium having computer readable code thereon, including program code comprising:

instructions for causing a network processor to provide at least one test function for testing network environments or devices, wherein said at least one function is selected from the group consisting of a network emulator, a network profile generator, a network profile capture tool, a packet generation tool, an application traffic generation tool, a real-time packet analysis tool, and a network packet capture and analysis tool..

16. (Canceled)

17. (Original) The computer program product of claim 15 further comprising instructions for causing said network processor to utilize a variety of different protocols.

18. (Original) The computer program product of claim 15 wherein said instructions for causing said network processor to utilize a variety of protocols comprise instructions for using a protocol selected from the group consisting of TCP, TCP/IP, MPLS, SCTP, UDP, and RTP.

19. (Original) The computer program product of claim 15 further comprising instructions for causing said network processor to utilize a variety of different network interfaces.

20. (Original) The computer program product of claim 15 wherein said instructions for causing said network processor to utilize a variety of different network interfaces comprises instructions for causing said network processor to utilize a network interface selected from the group consisting of 10Mbit Ethernet, 100Mbit Ethernet, 1 gigabit Ethernet, 1.0625 Gigabit Fibrechannel, OC-3c, OC-12, OC-12c, T1/E1, and T3/E3.

21. (Original) The computer program product of claim 15 further comprising instructions for causing at least one additional network processor to provide said at least one test function for testing network environments or devices.

22. (Original) The computer program product of claim 15 further comprising instructions for causing at least one CPU to communicate with said network processor.

23. (Original) The computer program product of claim 15 further comprising instructions for causing said network processor to be utilized as an accelerator to analyze data at line rates.

24. (Original) The computer program product of claim 22 further comprising instructions for causing said network processor to provide data to said CPU for analysis.

25. (Original) The computer program product of claim 22 further comprising instructions for causing said CPU to operate in a feedback loop with said network processor.

26. (Currently amended) A method of testing network environments and devices comprising:

providing a network processor;

coupling said network processor to a communications network; and

directing said network processor to provide at least one function, wherein said at least one function is selected from the group consisting of a network emulator, a network profile generator, a network profile capture tool, a packet generation tool, an application traffic generation tool, a real-time packet analysis tool, and a network packet capture and analysis tool. .

27. (Canceled)

28. (Original) The method claim 26 further comprising the step of utilizing a variety of different
protocols.

29. (Original) The method of claim 26 wherein said step of utilizing comprises utilizing a protocol selected from the group consisting of TCP, TCP/IP, MPLS, SCTP, UDP, and RTP.

30. (Original) The method claim 26 wherein said step of coupling is performed with a variety of different interfaces.

31. (Original) The method claim 30 wherein said interfaces are selected from the group consisting
of 10Mbit Ethernet, 100Mbit Ethernet, 1 gigabit Ethernet, 1.0625 Gigabit Fibrechannel, OC-3c, OC-12, OC-12c, T1/E1, and T3/E3.

32. (Original) The method claim 26 further comprising the step of providing at least one additional network processor.

33. (Original) The method claim 32 where at least one additional network processor is in communication with said network processor.

34. (Original) The method claim 26 further comprising the step of providing a Central Processing Unit (CPU), said CPU in communication with said network processor.

35. (Original) The method claim 32 further comprising the step of using said network processor as an accelerator to analyze data at line rates.

36. (Original) The method of claim 34 further comprising the step of using said network processor to provide data to said CPU for analysis.

37. (Original) The method of claim 34 further comprising the step of providing a feedback loop between said network processor and said CPU.

38. (Original) The method of claim 26 further comprising the step of changing from directing said network processor to provide a first function to directing said network processor to provide a second function.

39. (Original) The method of claim 26 further comprising the step of directing said network processor to provide more than one function simultaneously on the same said network processor.

40. (New) The test system of claim 1 wherein said network processor is capable of performing packet processing, cell processing, look-up table processing, and queue management within a network switch or router.

41. (New) The computer program product of claim 15 wherein said network processor is capable of performing packet processing, cell processing, look-up table processing, and queue management within a network switch or router.

42. (New) The method of claim 26 wherein said network processor is capable of performing packet processing, cell processing, look-up table processing, and queue management within a network switch or router.